

R 37: Production of High-Quality Yarn Made from 100% Polyester with over 98% Efficiency



Nuogao Fiber invested in a new spinning mill in 2024 with five Rieter semi-automated rotor spinning machines R 37 equipped with the automatic doffing system ROBOdoff. The R 37 machines produce high-quality 100% polyester yarns in high counts at an efficiency of up to 98%, significantly reducing production costs and further strengthening the company's core competitiveness.

The Challenge

Producing 100% polyester yarn in high counts places extremely high demands on rotor spinning machines. Conventional rotor spinning machines often face challenges such as high breakage rates, low production efficiency, unstable yarn quality, high yarn faults, and poor fabric surface quality when manufacturing 100% polyester yarn.

Furthermore, downstream weaving and knitting markets demand consistent yarn package length and weight to minimize downstream yarn waste. The consistency of yarn package length directly affects mills' raw material utilization rate and production costs. How to effectively reduce production costs while improving yarn quality has become a key challenge for Nuogao.

The Solution

The Rieter rotor spinning machine R 37 delivers excellent spinning stability, ensuring high production at high speed while maintaining low breakage rates. Thanks to its unique redesigned spinning box and optimized spinning components, the R 37 enables efficient fiber opening while protecting fibers from damage when producing high-count 100% polyester yarns. This ensures stable yarn quality and excellent fabric evenness. In the downstream market for 100% polyester rotor yarn in high counts, the yarns produced by the R 37 have become the preferred choice.

The automatic doffing system ROBOdoff does not only automate the unpleasant task of manual doffing, but it also ensures that all doffed packages have the same package length. The automatic doffing system works as a traveling cleaner when doffing is not required. It cleans the rail and the machine's spinning positions, providing customers with dual flexibility.



The Rieter R 37 rotor spinning machine with ROBODoff – maximum efficiency, consistent yarn quality, and enhanced competitiveness for Nuogao Fiber.

The Customer's Benefits

After being put into operation, the R 37 has maintained a stable operating efficiency of over 98%. Taking the production of 100% polyester yarn with a count of Ne 16 as an example, the delivery speed can reach 153 m/min, with a stable daily output of approximately 3.7 tons per machine. With only four operators required to monitor all five machines, it significantly reduces both labor demand and workload. The fixed-length doffing feature of ROBODoff ensures minimal deviation in package weight. During packaging, each bundle can be precisely controlled to consist of eight standard yarn packages, eliminating the need for manual weighing and matching, which remarkably enhances production efficiency. In downstream weaving or knitting processes, yarn waste has been reduced, and efficiency has noticeably improved. Additionally, another advantage of the ROBODoff is a consistent and proper formation of the transfer tail.

Moreover, the stable production process significantly enhances the consistency of yarn quality, providing downstream customers with a more reliable supply of superior raw materials. This strengthens Nuogao's competitive edge in the market.

Rieter Ltd.
Klosterstrasse 20
CH-8406 Winterthur
T +41 52 208 7171
machines@rieter.com
aftersales@rieter.com



The Customer's Statement

"The R 37 operates with outstanding stability, producing yarn of consistent and exceptional quality with superior evenness. Feedback from our downstream customers indicates that fabrics made from R 37 rotor yarn feature a smoother surface, enhanced softness, and a marked improvement in overall quality."

"Moreover, from installation to production, Rieter engineers have provided dedicated support, promptly addressing any challenges encountered. Rieter's solutions have not only enhanced production efficiency but also substantially strengthened our market competitiveness."

Enzhong Lv

GM of Xuzhou Nuogao Fiber Technology Co., Ltd.

Xuzhou Nuogao Fiber Technology Co., Ltd.

23 Xingfu Road
Datun Sub-district Office
Peixian County
Xuzhou City 221600
Jiangsu Prov. China
Phone: +8618606172866

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